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10 IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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12 TITLE: MALE URINARY SYSTEM

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2                   BACKGROUND OF THE INVENTION

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4       1. Field of The Invention

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7                   The present invention relates to devices and apparatuses  
8                   for assisting males in urination.

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10      2. Background Information

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12                  Urination can be difficult, messy, and (under  
13                  circumstances requiring assistance) embarrassing when one  
14                  cannot use a conventional toilet facility in the conventional  
15                  manner. All of these factors are greatly amplified when the  
16                  individual is, for example, a male in his teens, who is bed-  
17                  ridden because of an accident and is tended (as still is  
18                  normally the case) by female care givers.

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20                  The subject invention arose from a situation involving a  
21                  boy in his early teens who, after a tragic accident, was bed-  
22                  ridden in a body cast for an extended period of time. For a  
23                  time, urination was something he avoided until he could avoid  
it no longer. Having to receive assistance from his female  
relatives (the only ones usually available for his care) was  
excruciatingly embarrassing for this young patient.

24                  The boys parents looked in vane for some device or system  
25                  which would allow their son to urinate without direct

1 assistance. Nothing effective could be found, even when  
2 involving the resources and ideas of fellow staff members at  
3 the hospital where the boy's mother (and the present inventor)  
4 worked.

5 The primary problem thus far unaddressed by the urinary  
6 devices and systems of the prior art relate to allowing a boy  
7 or man to urinate while lying substantially on his back, but  
8 without having any back flow through whatever tubing or  
9 conduit is involved in receiving the urine. Of course, the  
10 use of conventional bed pans is virtually out of the question  
11 for such a patient, so literal ability to use is beyond the  
12 realm of a mere "problem" with such conventional approaches.

13 Additional deficiencies in the prior art devices and  
14 systems relate to ease of managing the collection and disposal  
15 of urine. Male urinals, as they are known, are usually  
16 unitary structures which, essentially, are receptacles with an  
17 opening (sometimes which an short conduit extending from one  
18 margin). Therefore contrary to OSHA and other applicable  
19 regulations, the urinal is often placed on a nearby table, or  
20 on the bed beside the patient immediately after use.

21 In addition, the bulk of such devices as were just  
22 described is such that they cannot be maneuvered into place  
23 when dealing with restrictive casts, braces, etc. Situations

1 such as this often require that a patient resort to the use of  
2 adult diapers.

3 It would be highly beneficial, and, not to exaggerate to  
4 any real degree, outright humane to provide an improved male  
5 urinary device or system which allowed a male patient to  
6 urinate without assistance, to provide for effective  
7 collection of urine without significant back flow, to address  
8 the objective of collecting urine remotely from the patient,  
9 table surfaces or the bed itself.

10 SUMMARY OF THE INVENTION

11 In view of the foregoing, it is an object of the present  
12 invention to provide an improved male urinary assistance  
13 device.

14 It is an object of the present invention to provide an  
15 improved male urinary assistance device, which allows use by  
16 prone patients without significant backflow during or after  
17 use.

18 It is an object of the present invention to provide an  
19 improved male urinary assistance device, which is configured  
20 for maneuvering the actual penis/collection system interface  
21 into tight spaces created by casts, braces, and the like, by  
22 separating the collection receptacle from the interface.

1           It is an object of the present invention to provide an  
2         improved male urinary assistance device, which includes a  
3         collection receptacle separate from the penis/collection  
4         system interface, thereby obviating the need to place the  
5         receptacle on table top or bed surfaces during or after use.

6           It is an object of the present invention to provide an  
7         improved male urinary assistance device, which is easily used  
8         by persons which neural motor control disorders.

9           In satisfaction of these and related objects, the present  
10       invention provides an improved male urinary system which, at  
11       its heart, includes a penis/urinary collection interface unit  
12       of a design which both collects urine without significant  
13       backflow during or after use and is sized and shaped for easy  
14       maneuvering into position, even when encountering restrictive  
15       spaces caused by body casts, braces, etc. Because the  
16       penis/urinary collection interface unit does not itself serve  
17       as the urine collection receptacle, but is merely in fluid  
18       communication therewith by a length of conduit, the collected  
19       urine will, if the system is used as intended, sit safely at  
20       a distance on the floor next to the patient's bed, or  
21       suspended from a hanging device or bracket attached to the  
22       patient's bed.

1           Because the present system is modular in nature, with  
2 varying configurations for users with differing needs, the  
3 system is easily modified to an almost "custom" design level.

4           The present designs are of relatively inexpensive,  
5 disposable plastic construction, and are, therefore,  
6 economical to provide to patients.

7           In addition to the medical uses described above, the  
8 present system can also have considerable utility for airplane  
9 pilots who, for lack of restroom facilities on-board, or  
10 because of recent security rules which prevent pilot egress  
11 from the cockpit, can benefit from the considerable ease of  
12 use of this urinary system in the tight confines of an  
13 aircraft cockpit. Much the same is true of long-haul truck  
14 drivers who prefer not to stop driving, until or unless it is  
15 absolutely necessary.  
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17    BRIEF DESCRIPTION OF THE DRAWINGS

18           Fig. 1 is a perspective view of a first embodiment of the  
19 penis/urinary collection interface unit of the present system.

20           Fig. 2 is a perspective view of an alternative embodiment  
21 of the penis/urinary collection interface unit of the present  
22 invention, one designed for use by patients in a predominantly  
23 supine position.

1                   DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

2                 Referring to figure 1, the penis/urinary collection  
3                 interface unit of the present invention is identified by the  
4                 reference numeral 10. While variations on the construction  
5                 details will be apparent to persons reasonably skilled in the  
6                 design and construction of plastic articles, any penis/urinary  
7                 collection interface unit 10 within the present invention will  
8                 include a primary receiver unit 12, and a secondary  
9                 containment unit 14. Primary receiver unit 12 is contoured at  
10               its proximal end 16 for receiving the penis of a user, and  
11               when pressed into position, to accommodate the nearby scrotal  
12               structure.

13               At least a portion of the primary receiver unit is, in  
14               the preferred embodiment, nested within the secondary  
15               containment unit 14. At the distal end 18 of the primary  
16               receiver unit 12, the primary receiver unit narrows to allow  
17               a gap 20 between the outer surface of of primary receiver unit  
18               12 and the inner surface of secondary containment unit 14.

19               The gap is preferentially oriented where it will be in  
20               the most downward position when positioned as is expected  
21               during normal use (that is, with the enlarged, proximal  
22               portion of the primary receiver unit in position for  
23               accommodating the scrotum). As will be apparent from an

1 examination of Fig. 1, because the margins of primary receiver  
2 unit 12 and secondary containment unit 14 are fused, urine,  
3 collected in gap 20, cannot spill from penis/urinary  
4 collection interface unit 10 (unless it fills to a point of  
5 overflowing -- not something which was experienced in  
6 prototype tests).

7 The structure of penis/urinary collection interface unit  
8 10 is such that, even when used by a man or boy lying on his  
9 back, urine is projected against the upper wall 22 of primary  
10 receiver unit 12, is diverted toward the distal terminus 24 of  
11 secondary containment unit 14 and flows out of penis/urinary  
12 collection interface unit 10 into a conduit 26 which is in  
13 sealed fluid communication with penis/urinary collection  
14 interface unit 10. Any urine that does not reach and travel  
15 through the distal terminus 24 of penis/urinary collection  
16 interface unit 10 is harmlessly collected in gap 20 as  
17 described above.

18 In certain embodiments of the present invention, the  
19 proximal margin 28 of primary receiver unit 12 is contoured so  
20 as not to present a sharp edge to the user. In the  
21 alternative, a soft, gasket-like material can be fitted to the  
22 margin, both to insure comfort of use, and to provide  
23 something of a fluid seal.

1           The embodiment of penis/urinary collection interface unit  
2       10 shown in Fig. 1 has been shown adequate for patients who  
3       are either standing or sitting. The version shown in Fig. 2  
4       involves relative orientation of primary receiver unit 12 and  
5       secondary containment unit 14 such that urine of most  
6       effectively collected and back flow minimized.

7           To provide the most spill-free use possible, all  
8       preferred embodiments of the present male urinary system  
9       include snap-fit lids 30 which close and substantially seal  
10      the penis/urinary collection interface unit 10 between uses.

11       Conduit 26, as already shown, attaches, at its proximal  
12      end, to the distal end of penis/urinary collection interface  
13      unit 10. The distal end of conduit 26 (not shown in the  
14      drawings) extends to a collection receptacle (not shown in the  
15      drawings) which will be, in any preferred embodiment, easily  
16      disconnected from conduit 26 for disposal of collected urine.  
17       The design and structure of such a receptacle can be quite  
18      varied, the most significant feature simply being its  
19      remoteness from the patient and the surrounding surfaces of  
20      sanitary concern.

21       Although the invention has been described with reference  
22      to specific embodiments, this description is not meant to be  
23      construed in a limited sense. Various modifications of the

1 disclosed embodiments, as well as alternative embodiments of  
2 the inventions will become apparent to persons skilled in the  
3 art upon the reference to the description of the invention.  
4 It is, therefore, contemplated that the appended claims will  
5 cover such modifications that fall within the scope of the  
6 invention.

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